



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,203	06/20/2003	Grant M. Kloster	42P17058	8820
8791	7590	08/03/2005	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			NGUYEN, KHIEM D	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,203

Applicant(s)

KLOSTER ET AL.

Examiner

Khiem D. Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16, 18-27 and 29-38 is/are pending in the application.
- 4a) Of the above claim(s) 18-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-9, 26, 27 and 29-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The non-final rejection as set forth in paper No. (012705) is withdrawn in response to applicants' amendments. A new rejection is made as set forth in this Office Action. Claims (1-14, 16, 18-27, and 29-38) are pending in the application in which claims 18-25 are withdrawn from consideration.

Claim Rejections - 35 USC § 102

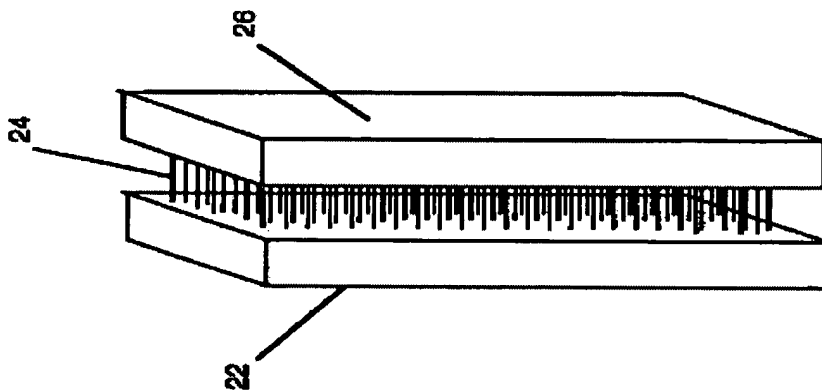
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 26-27, and 29-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Poco et al. (U.S. Patent 6,168,737).

In re claim 1, Poco discloses a method, comprising: forming a layer of first material between two substrates 22, 26 of a stacked device; forming a layer of second material between the two substrates 22, 26 of the stacked device (col. 4, lines 48-64 and FIG. 3),

**FIGURE 3**

wherein the second material causes a reaction (to create the polymer foam **24**) in a portion of the first material (col. 3, lines 27-37).

In re claim 2, Poco discloses that the reaction comprises polymerization (col. 3, lines 27-37).

In re claim 3, the process of diffusing the material between a portion of the two substrate is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 4, it is inherent that in order to create the polymer foam **24** (col. 3, line 27 to col. 4, line 64 and FIG. 3) as disclosed by Poco, the first material must be selected from the group consisting of: diisocyanate monomers, a diisocyanate end-capped compliant oligomer, and p-toluenesulfonyl semicarbazide.

In re claim 5, the processes of injecting the first material between a portion of the two substrates of the stacked device, spraying the first material between the portion of the two substrates of the stacked device, and immersing the two substrates of the stacked device in the first material is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 6, the process of diffusing the second material between a portion of the two substrates of the stacked device is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 7, it is inherent that in order to create the polymer foam **24** (col. 3, line 27 to col. 4, line 64 and FIG. 3) as disclosed by Poco, the second material must be

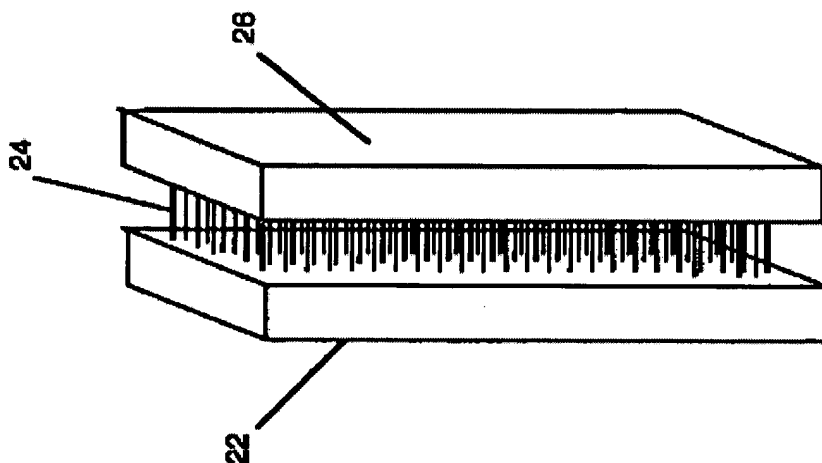
Art Unit: 2823

selected from the group consisting of: water, a hydroxyl end-capped oligomer, and a carboxylic acid end-capped polymer.

In re claim 8, the processes of injecting the second material between a portion of the two substrates of the stacked device, spraying the second material between the portion of the two substrates of the stacked device, and immersing the two substrates of the stacked device in the second material is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 9, Poco discloses that the reaction produces a polymer foam **24** (col. 3, lines 27-37).

In re claim 26, Poco discloses a method, comprising: forming a layer of material between two substrates **22**, **26** of a stacked device col. 4, lines 48-64 and FIG. 3); and

**FIGURE 3**

reacting a portion of the layer of material, wherein the reaction (to create the polymer foam **24**) results in the portion of the layer of material increasing in volume (col. 3, lines 27-37).

In re claim 27, **Poco** discloses that the reaction comprises polymerization (col. 3, lines 27-37).

In re claim 29, **Poco** discloses that the reaction produces a polymer foam **24** (col. 3, lines 27-37).

In re claim 30, **Poco** discloses a method comprising: depositing a first material between two substrates **22**, **26** of a stacked device (col. 4, lines 48-64 and FIG. 3); depositing a second material between the two substrates of the stacked device; and filling a portion of the area between the two substrate with a polymer foam **24** as a product of a reaction between the first material and the second material (col. 3, lines 27-37 and FIG. 3).

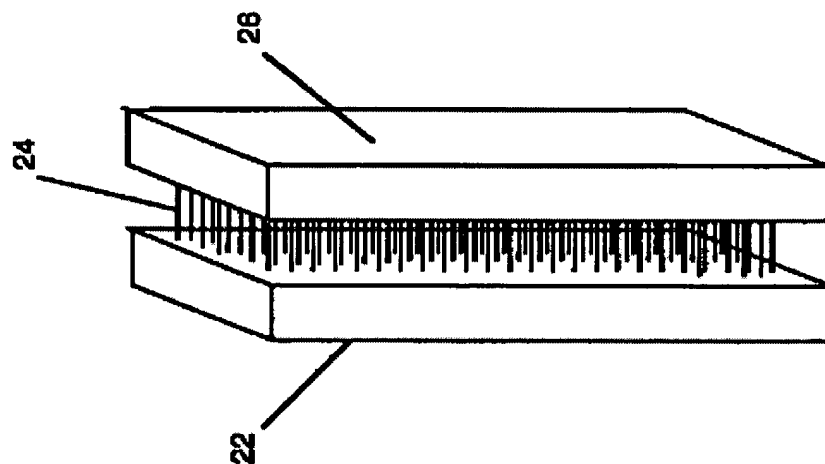


FIGURE 3

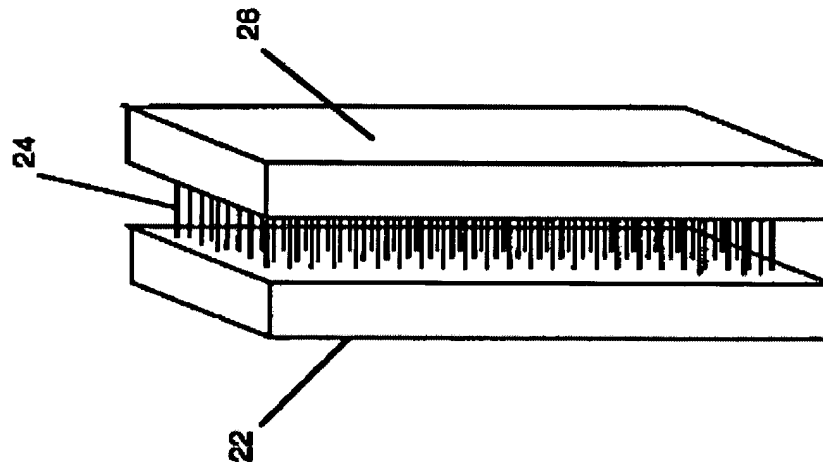
In re claim 31, the processes of diffusing the first material into a portion of the area between the two substrates; injecting the first material into the portion of the area between the two substrates; spraying the first material into the portion of the area between the two substrates; or immersing the two substrates in the first material is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 32, it is inherent that in order to create the polymer foam 24 (col. 3, line 27 to col. 4, line 64 and FIG. 3) as disclosed by Poco, the first material must be selected from the group consisting of: diisocyanate monomers, a diisocyanate end-capped compliant oligomer, and p-toluenesulfonyl semicarbazide.

In re claim 33, the processes of diffusing the second material into a portion of the area between the two substrates; injecting the second material into the portion of the area between the two substrates; spraying the second material into the portion of the area between the two substrates; or immersing the two substrates in the second material is well-known to one of ordinary skill in the art at the time of the invention was made.

In re claim 34, it is inherent that in order to create the polymer foam 24 (col. 3, line 27 to col. 4, line 64 and FIG. 3) as disclosed by Poco, the second material must be selected from the group consisting of: water, a hydroxyl end-capped oligomer, and a carboxylic acid end-capped polymer.

In re claim 35, **Poco** discloses a method comprising: forming a layer of material on a substrate **22, 26** including an interconnect structure formed thereon; removing a portion of the layer of material to expose a top surface of the interconnect structure; combining the substrate **22, 26** with another substrate (col. 4, lines 48-64 and FIG. 3); and

**FIGURE 3**

filling the area between the two substrates **22**, **26** with a polymer foam **24** as a product of a reaction in the layer of material (col. 3, lines 27-37).

In re claim 36, **Poco** discloses that the reaction in the layer of material further comprising polymerization (col. 3, lines 27-37).

In re claim 37, **Nakao** discloses forming the layer of material further comprising forming the layer of material to a thickness greater than the top surface of the interconnect structure (FIG. 3).

In re claim 38, it is inherent that in order to create the polymer foam **24** (col. 3, line 27 to col. 4, line 64 and FIG. 3) as disclosed by Poco, the layer material must be selected from the group consisting of: water, a hydroxyl end-capped oligomer, and a carboxylic acid end-capped polymer.

Allowable Subject Matter

Claims 10-14, and 16 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D. Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:30 AM - 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K.N.
July 27th, 2005



**W. DAVID COLEMAN
PRIMARY EXAMINER**